

Background Blur WebGPU Decision Worksheet

AI for Video Engineering · Lesson 2.5 — Answer the seven questions before shipping browser background blur.

1. Resolution target

- ☐ 480p video calls — landscape model (144×256) is enough
- ☐ 720p video calls — general model (256×256), default
- ☐ 1080p + telemedicine — general model + mask postproc
- ☐ 4K streaming preview — consider SAM 2 instead

2. Backend tier you target first

- ☐ Tier 1 — WebGPU + Insertable Streams + Worker
- ☐ Tier 2 — WebGL + Insertable Streams + Worker
- ☐ Tier 3 — WebGPU + `canvas.captureStream()`
- ☐ Tier 4 — WASM SIMD + 2D canvas
- ☐ Tier 5 — disable feature, surface a toast

3. Cross-browser fallback ladder verified

- ☐ `navigator.gpu` adapter request actually succeeds
- ☐ WebGPU GPU blocklist checked (≈8% Chrome users)
- ☐ Worker-only Insertable Streams variant tested
- ☐ Tier-4 quality acceptable on Safari 17 laptop

4. Mask post-processing in the compositor

- ☐ Sigmoid remap to remove the halo (steepness 8–14)
- ☐ Bilinear upsample with 1 px feather, not 4 px
- ☐ Output mask resolution matches frame resolution

5. Temporal smoothing for hair flicker

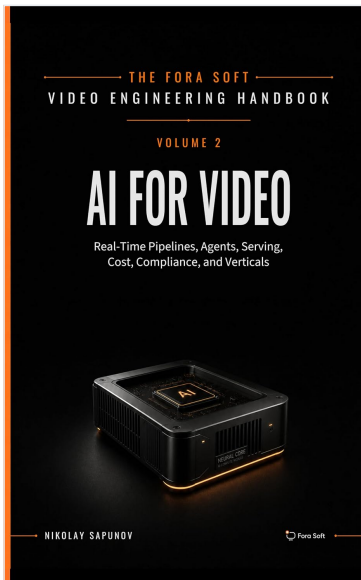
- ☐ Ring buffer of last 3 frames' masks
- ☐ Average sample in the compositor shader
- ☐ ≤ 5 frames — otherwise motion lag is visible

6. Multi-person policy

- ☐ Both people sharp — MediaPipe is fine
- ☐ Single-person isolation — upgrade to SAM 2
- ☐ User-side toggle for which faces to keep

7. Build vs buy — when to pick a vendor

- ☐ Bundling with noise suppression → Krisp
- ☐ Native desktop on RTX GPU → NVIDIA Maxine
- ☐ Regulated product needing BAA / SOC 2 → vendor
- ☐ Everything else in 2026 → MediaPipe + WebGPU



GO DEEPER · VOLUME 7 OF 7

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This worksheet walks seven decisions for shipping browser blur, from model and backend tier to mask smoothing and build versus buy. Volume 7 covers AI under a real-time budget: where AI plugs into a WebRTC pipeline, call latency, serving and the cost per stream-hour.

WHAT YOU WILL FIND INSIDE

- Where AI plugs into a WebRTC pipeline
- Latency budgets for in-call video effects
- Serving and runtime choices for real time
- Cost per stream-hour of video AI

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